The Value-Added Potential of Physical Infrastructure

The Criticality of the Physical Layer

You're a data center deployment expert—but are the physical infrastructures you're putting in place working with you or against you?

Today's networks can only be as strong as their physical foundations. The servers and switches of the logical layer may seem like the big hero, but a well-designed physical layer is critically important to ensuring higher-level functions work for data center requirements well into the future. With data center traffic growing at an unprecedented rate, it is critical that data centers are purpose-built from the ground up to quickly react to changing business demands.

UNPRECEDENTED GROWTH

33%

By 2021, 33% of IT workloads are expected to be contracted to cloud, colocation, hosting, and SaaS suppliers, making the ability to quickly deploy repeatable, validated architectures increasingly important.*

61%
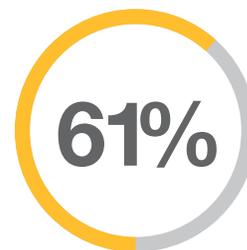
From 2018 to 2025, the world's collective data is expected to grow from 33 to 175 zettabytes—a compounded annual growth rate of 61%—so data centers need to optimize their physical layer today in order to handle tomorrow's capacity demands.**

IMPLEMENTATION

Simply put, hardware takes up space. If that space is smartly designed, it can go a long way toward maximizing the capacity of the network you're implementing.

It's during the planning, needs assessment, design, and installation phases that a data center build or expansion is most likely to stall or slow down—the phases where physical layer requirements and space constraints are primary factors being considered. Racks and cabinets, outlet patch panels and cords, grounding systems, cabling, and cable management—it's a lot of separate parts and pieces that need to work together as a whole.

*Uptime Institute, 2019 Data Center Industry Survey
**IDC, The Digitization of the World

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Then there are the necessary considerations for risk redundancy and cooling optimization, and ensuring the connectivity, bandwidth, and fault tolerance needed to leverage the latest technology.

These are the things a solid infrastructure design can address. Instead of looking at the physical layer as a constraint to work around, it's worth putting in place a physical infrastructure that works for you, not against you, by balancing a facility's power needs, data requirements, space restraints, and cooling capacity.

PERFORMANCE

Today, fewer companies are relying on outside vendors for procurement and implementation. Instead, what they are looking for is a partner who can make sure their systems are always running properly. If things go wrong, your customers will turn to you to fix it. If things go right, they will turn to you to help them scale up.

You know better than anyone that with every move, add, or change (MACs) in a data center, the physical layer is stressed. Changing one thing can affect the performance of ten others, having a negative impact on overall cooling capacity and power costs, ultimately increasing total cost of ownership. The physical layer is what determines how simple or complex MACs will be to execute, and the extent of their impact on the overall network.

NETWORK INTELLIGENCE

The success of your data center is going to be measured by its performance and utilization capacity. In order to provide the TCO and ROI your clients are looking for, it is essential to give them a network with the intelligence needed to continually optimize operations.

A well-designed physical layer simplifies data center management by improving visibility into resource capacities, making it easier to identify opportunities for operational efficiencies. As improvements are identified, they can be incorporated into the deployment of future designs, building a framework for continuous improvement throughout the data center lifecycle.

MINIMIZING COMPLEXITY, MAXIMIZING MARGINS

Unglamorous as networking hardware is, if done right, it can speed up deployment and provide added revenue potential. And with increasing competition when it comes to services like technology finding, installation, and training, a well-designed physical layer can provide the edge it takes to stay relevant in the industry.
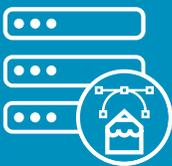
Develop, design, and deploy projects quickly and at scale.
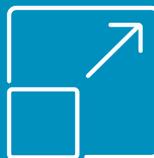
Build truly flexible, resilient, and future-proof networks.

Offer customers built-In network intelligence.

However, the different technologies available and the complexity involved in designing and implementing physical network infrastructure can often get in the way of realizing these benefits. Yet with the right tools and partners, they don't have to. Taking advantage of pre-configured infrastructure solutions that are based on proven reference architectures removes much of the complexity, enabling quick builds and streamlined delivery without sacrificing performance.

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Faster, Better, and Smarter Converged Infrastructure Solutions

Panduit is the trusted partner data center experts need to help turn optimized network infrastructure into increased revenue and improved margins. Our converged infrastructure solutions are designed to let you quickly and confidently deploy custom configured, robust systems that fulfill your customers' network needs while also protecting your profit margins.

Panduit's pre-configured modular systems are fully tested and validated, seamlessly integrating logical systems with the physical layer so you can deliver smart, scalable, and efficient connectivity, and hand off a network with monitoring built-in to ensure operational efficiency and improved ROI.

FASTER IMPLEMENTATION

Panduit's converged infrastructure solutions are made to streamline and accelerate data center design and deployment to address changing IT and business demands. Panduit's global logistics, manufacturing, and pricing capabilities mean you can procure complete infrastructures with a single part number, eliminating the hassle of juggling multiple vendors and shortening the total time from quote to value.

Quality testing by both Panduit and our Global Alliance Partners significantly reduces risk and minimizes integration issues. Our pre-engineered solutions arrive ready-to-go, fully tested, and validated to ensure component interoperability, so you can focus on network performance instead of network limitations.

BETTER SYSTEM PERFORMANCE

Panduit's modular infrastructure solutions are based on proven reference architectures and are configured to address a range of applications and business demands. They provide a physical infrastructure designed with migration paths already in place for future scalability and higher data rates. Consistent and predictable deployments mean solutions that can easily scale globally across an entire enterprise, simplifying IT, and reducing total cost of ownership.

3X FASTER DEPLOYMENT

Panduit's converged infrastructure solutions arrive tailored to your needs for up to 3X faster deployment.

75% FASTER MOVES-ADDS-CHANGES

Panduit's data center solutions enable 75% faster moves, adds, and changes.

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More Meaningful Connections ▬▬ ▬

SMARTER NETWORK INTELLIGENCE

Offer your customers truly comprehensive data center solutions complete with network intelligence that leads to tangible business outcomes. Panduit's infrastructure solutions allow you to hand off a system that's custom configured to deliver operational transparency and actionable information from the start. Built-in monitoring capabilities give your clients what they need to manage day-to-day capacity, energy efficiency, and uptime, and help you enable upgrades rapidly with minimal reconfigurations and downtime.

80%
FASTER
TO REPAIR

PDCIM solutions proactively detect and resolve issues, leading to an 80% faster mean-time-to-repair of connectivity issues.

Industry-leading Net-Access™ N-Type and S-Type Cabinet Technology.

Enhanced with SmartZone™ G5 Intelligent Integration.

Designed for superior thermal management.

Keyless door access for enhanced security.

Built for high capacity cable densities.

Modular cabinets for better serviceability and flexibility for MACs.

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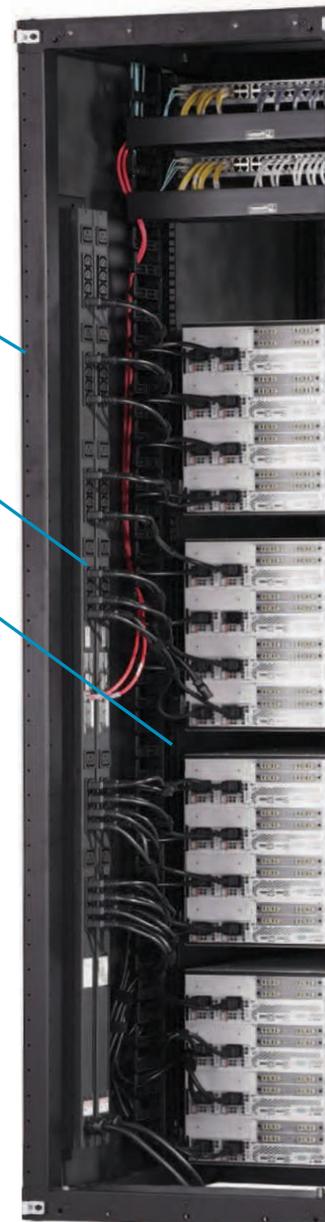
What's threatening your data center performance?	How converged infrastructure solutions can save the day:
Over-or under-capacity.	Deploy infrastructure as needed to meet demand.
Extended design and installation cycles.	Pre-engineered modular solutions ready to rack-and-roll.
Difficulty meeting compliance standards.	Designs based on proven reference architectures, fully tested and validated to ensure component interoperability.
Lack of network visibility and inefficient operations.	SmartZone™ Solutions, a suite of data center infrastructure management (DCIM) solutions, provide real-time data on the status of power, cooling, connectivity, security, and more.
Scalability and upgrade challenges.	High performance fiber solutions, including OM4 and OM5 Signature Core™ Fiber Optic Cabling Systems, HD Flex™ 2.0 Fiber Enclosures, and PanMPO™ Fiber Connectors, that deliver the flexibility networks need to accommodate next generation technology.
Limited space.	Optimize space use, reliability, and installation time with FiberRunner® and Wyr-Grid® cable routing systems, the most robust routing systems on the market.

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A Trusted Partner for Future-Proof Solutions

In a rapidly changing market, it's nearly impossible to keep up with changing standards and best practices. Panduit's Global Strategic Alliances ensure we are not only up-to-speed but ahead of the game when it comes network infrastructure.

To learn more about partnering with Panduit and our converged infrastructure solutions visit **www.panduit.com/datacenter.**

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CISCO
Partner

Increasing traffic within data centers requires fiber optic link bandwidth capacity to keep expanding over time. We've worked with our Global Strategic Alliance partner Cisco Systems to simplify and accelerate deployment of their leading-edge technologies by developing products, pre-configured cabinet, and open rack solutions optimized specifically for the Nexus 9000/3000 switches and Optics. BiDi Dual-Rate Tranceivers, and Panduit Signature Core Fiber Optic Cabling Systems. Together, our solutions help create a scalable, future-proof network backbone that can scale from 10 up to 400Gbps without rip-and-replace upgrades.

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Since 1955, Panduit's culture of curiosity and passion for problem solving have enabled more meaningful connections between companies' business goals and their marketplace success. Panduit creates leading-edge physical, electrical, and network infrastructure solutions for enterprise-wide environments, from the data center to the telecom room, from the desktop to the plant floor. Headquartered in Tinley Park, IL, USA and operating in 112 global locations, Panduit's proven reputation for quality and technology leadership, coupled with a robust partner ecosystem, help support, sustain, and empower business growth in a connected world.

For more information

Visit us at www.panduit.com

Contact Panduit North America Customer Service by email: cs@panduit.com
or by phone: 800.777.3300